

1 BEFORE THE
2 ILLINOIS COMMERCE COMMISSION
3 IN THE MATTER OF:)
4)
5 ELECTRIC POLICY COMMITTEE MEETING)
6 Chicago, Illinois
7 October 1, 2002
8 Met pursuant to notice at 2:00 p.m.
9 BEFORE:
10 CHAIRMAN KEVIN WRIGHT
11 COMMISSIONER EDWARD HURLEY
12 COMMISSIONER TERRY HARVILL
13 COMMISSIONER RUTH KRETSCHMER
14 COMMISSIONER MARY FRANCIS SQUIRES
15 (telephonically)
16 APPEARANCES:
17 MR. JOHN N. MOORE,
18 Staff attorney for the Environmental Law
19 & Policy Center;
20 MR. THEODORE L. BRONSON,
21 Associate Director, Distributed Energy
22 Group for Gas Technology Institute
23 MR. JOHN J. CUTTICA,
24 Coordinator of Energy and Environmental
25 Research Programs for University of
26 Illinois at Chicago.
27 SULLIVAN REPORTING COMPANY, by
28 Tracy L. Ross, CSR

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E X H I B I T S

Number	For Identification	In Evidence
None.		

1 COMMISSIONER HARVILL: This is a regularly
2 scheduled meeting of the Illinois Commerce
3 Commission pursuant to the applicable statutes.
4 Present today are Commissioners Hurley, Squires,
5 Chairman Wright and myself, Commissioner Harvill.
6 We will be joined at some point in time by
7 Commissioner Kretschmer. We have a quorum and,
8 therefore, we will begin.

9 The purpose of today's meeting is to
10 discuss electric policy issues, specifically. We
11 have members of the Midwest Combined Heat and
12 Power Initiative here to make a presentation to
13 the Commission on combined heat and power and
14 other distributed energy resources in Illinois.

15 We're going to cover a number of issues
16 today including the energy environmental benefits
17 of CHP and other distributed energy resources;
18 state and regional and national commitments to
19 distributed energy resources; myths about
20 distributed energy resources; the current
21 regulatory environment in Illinois; an example of
22 some regulatory barriers that are in place from

1 the CHP perspective and some recommended changes.
2 With that, I'm going to turn things over to the
3 members of the Illinois Combined Heat and Power
4 Consortium.

5 Mr. Moore, if you could do a brief
6 introduction of each of the members that will be
7 presenting here today I would appreciate that.

8 MR. JOHN MOORE: Thank you very much,
9 Commissioner Harvill. My name is John Moore. I
10 am with the Environmental Law & Policy Center in
11 Chicago. ELPC is a regional ecobusiness
12 environmental energy organization and we are a
13 participant in the Midwest Combined Heat and
14 Power Initiative.

15 With me to my left is Ted Bronson. Ted
16 Bronson is an Associate Director of the Gas
17 Technology Institute for Distribute Energy
18 Resource Center.

19 Sitting next to Ted is John Cuttica.
20 John, among his other titles, is Director of the
21 Midwest Combined Heat and Power Application
22 Center that is run primarily out of the

1 University of Illinois at Chicago.

2 All three of us are participants in the
3 Midwest Combined Heat and Power Initiative which
4 is an ad hoc coalition of academic private
5 industry trade association, nonprofit
6 organizations devoted to promoting the cause of
7 combined heat and power throughout the Midwest.

8 Why are we here today? Just to briefly
9 refresh your memory because it has been a couple
10 of years now. In October of 1999, the
11 Commission, through the Electric Policy
12 Committee, asked a series of questions on
13 distributed resources. Several parties
14 throughout Illinois responded to those questions.

15 In March 2000, Staff at the ICC issued a
16 report on the state of distributed resources in
17 Illinois. And the report discussed barriers and
18 other issues to the growth of distributed
19 resources, and we mention that report
20 periodically throughout our presentation today.

21 In May 2000, the Commission held a
22 one-day workshop or hearing on distributed

1 resource issues and since then there really
2 hasn't been very much in the way of public action
3 that has occurred. However, there have been
4 other developments throughout the Midwest and the
5 country, and a primary purpose of our
6 presentation today is to update and apprise the
7 Commission of developments and other -- and
8 resources that have occurred since 2000.

9 Ted Bronson will discuss opportunities
10 and benefits of combined heat and power.

11 John Cuttica will discuss technologies,
12 government commitments and misconceptions that
13 people have about combined heat and power.

14 And I will discuss barriers to further
15 deployment of combined heat and power throughout
16 the Midwest.

17 All of us will discuss potential
18 solutions here. Let me say that although we're
19 here primarily to discuss combined heat and
20 power, CHP is a form of Distributed Energy
21 Resource, therefore, I think it's accurate to say
22 that most, if not all of the discussion we

1 include in this presentation, particularly as to
2 barriers and solutions applies more generally to
3 distributed resources. I think that's extremely
4 important to keep in mind as we make our
5 presentation.

6 And, finally, if there are any
7 inaccuracies in any part of our reports and our
8 presentation, we strongly encourage individuals
9 and parties to contact us. What our -- what our
10 individual organizations acting through the CHP
11 Initiative want more than anything else is
12 dialogue and discussion that will lead to
13 progress.

14 And with that in mind, let me turn it
15 over to Ted to begin.

16 MR. THEODORE BRONSON: Thanks, John.

17 And thank you Commissioners for hearing
18 us today.

19 Just to begin, the purpose of today's
20 meeting, we're going to summarize some of the
21 benefits and opportunities of CHP including
22 meeting diverse and ever changing consumer

1 electricity requirements, energy conservation and
2 grid enhancement; as well as reviewing some of
3 the emerging policies that support CHP and
4 distributed resources from President Bush's
5 National Energy Policy to the Illinois Energy
6 Policy that was issued last year to the Chicago
7 Energy Plan.

8 We're also going to discuss some
9 specific barriers to realizing the full promise
10 of CHP and other DR in Illinois, as well as --
11 we're going to conclude by recommending some
12 changes and some actions regarding Illinois law
13 and policy.

14 COMMISSIONER SQUIRES: Excuse me, do you think
15 that you can turn the microphones up a little
16 bit?

17 MR. THEODORE BRONSON: The next slide is just
18 to show you three organizations that are
19 currently working together in the Midwest on this
20 issue. The Midwest CHP Initiative, ad hoc
21 consortium of educational, industry,
22 environmental and government organizations; The

1 Midwest Cogen Association, trade organizations,
2 engineering firms, manufacturers and utilities
3 representative and the Midwest CHP Application
4 Center, a partnership with the University of
5 Illinois at Chicago the Gas Technology Institute,
6 and U.S. DOE to provide direct project support
7 and education outreach support to potential CHP
8 applications. Together, all three organizations
9 are working together to develop the market for
10 CHP in the Midwest and Illinois.

11 Combined Heat and Power, as John said is
12 a subset of distributed resources. Distributed
13 resources being -- providing generation of power
14 close to the source. CHP -- otherwise known as
15 cogeneration is an integrated system located at
16 or near the end user that serves at least part of
17 the electrical load and uses the thermal energy
18 produced by the power source either heating,
19 cooling, dehumidification or industrial process
20 heat purposes.

21 Now, on this slide it gets very busy,
22 please don't worry about the numbers. I'm really

1 just showing this to demonstrate a point. The
2 slide was provided by the U.S. CHP policy name by
3 Gary Naparada (phonetic) from the National
4 Nuclear Energy Laboratory who is a former
5 Electrical Commission Chairman for the state of
6 Colorado. This is just an illustration of an
7 energy flow chart of how we use energy in the
8 U.S. for power production. On the left-hand it
9 shows a fuel input -- being inputted into the
10 system. And then on the right-hand side in the
11 green, you see what is actually going out to the
12 users and being billed for. And in the red, we
13 see the energy that is being lost to our system
14 right now. Currently two-thirds of the fuel
15 input to our power production processes is being
16 wasted and exhausted into the atmosphere. With
17 this, it's something that we don't think that our
18 country's going to be able to afford to do for
19 much longer. You can see that with the trend in
20 large central generation plants moving to
21 combined cycle plants, they're now operating of
22 efficiencies of over 50 percent; but this also

1 presents an opportunity for DG & CHP to offer
2 systems that can provide power, heat and cooling
3 at efficiencies between 60 and 80 percent.

4 Why now? Why has there been a big buzz
5 in the industry over distributed energy and
6 combined heat and power? As you know, rising
7 concerns over load growth, The Energy Information
8 Administration, a department of the Department of
9 Energy, estimates a 42 percent growth in
10 electricity demand by 2020. That equals about
11 400 gigawatts of power. We're looking at -- with
12 the distributed energy industry possibly
13 providing 20 percent of that power by 2020 or 80
14 gigawatts.

15 Rising concerns over power supply
16 constraints, e.g., aging infrastructure, we
17 experienced a bit of that near Chicago a few
18 years ago.

19 Electricity prices, environmental
20 concerns, power security is a new emerging
21 concern that arose recently since September 11th.
22 There's actually a report issued by the Union of

1 Concerned Scientists stating that a distributed
2 move -- a move to distribute power plants can
3 help achieve stronger power security for our high
4 impact defense sources.

5 Also here on the slide is, we have
6 selected power outage costs which is a chart that
7 is a few years old; but this is extremely -- this
8 is one of the key factors for limitations
9 distributed energy, what we've been seeing
10 recently; the reliability costs, recording the
11 reliability costs on power outages and down time
12 to business.

13 With that, with the opportunities, of
14 course, we also have the benefits of combined
15 heat and power to Illinois. High efficiency,
16 on-site generation means improved reliability
17 with the primary source of power being today,
18 reciprocating engines or gas or gas turbines
19 providing power and being backed up by the grid.
20 We can provide improved reliability sources for
21 our consumers. We could also support the grid
22 infrastructure as noted in the National Energy

1 Policy and the Commission's documents that
2 distributed energy can reduce T&D constraints as
3 well as defer some of the costly grid updates in
4 the future. Through distributed energy, we can
5 provide for improved power quality to get up to
6 six nines of power quality through certain
7 distributed energy solutions that are -- that can
8 meet some of the emerging needs of the high tech
9 industry; as well as provide for lower emissions.
10 One of the things with emissions is that the only
11 thing we -- that we know right now that can
12 reduce CO2 emissions is efficiency improvements.
13 When we can get our efficiencies up to 60 to 80
14 percent so we can have a direct correlation to
15 the reduction of CO2 in the environment.

16 What I'd like to speak about briefly is
17 that by utilizing or by emulating our existing
18 technologies right now that we have, can open the
19 doors to facilitate the deployment of new cleaner
20 technology such as fuel cells and microturbines
21 as they become better commercially available.

22 Some of the ICC Staff comments from a

1 few years ago on distributed resources benefits,
2 just briefly how consumers can lower energy
3 bills, this will be a must because for -- any
4 customer can install combined heat and power,
5 they're going to need to justify it economically
6 first.

7 Secondly, reducing the need for upgrades
8 from the existing distribution system.

9 And, thirdly, effectively providing line
10 loading relief for T&D lines by placing of the
11 generation source as close as possible to the end
12 user.

13 With that, I believe I'm complete on the
14 opportunities and benefits. I'm going to turn it
15 over to John Cuttica.

16 MR. JOHN CUTTICA: Thank you, Ted.

17 Before I get started, I'd also like to
18 thank the Commission for providing us the
19 opportunity today to express our thoughts and
20 beliefs regarding CHP and the opportunities this
21 energy concept can provide as, at least one
22 element, in Illinois energy future.

1 I'm going to walk you through the next
2 eight or nine slides trying to leave you with a
3 clear picture of what elements of technologies
4 make up a typical CHP System and how these
5 technologies can be integrated to provide both
6 electric and thermal energy to the user.

7 And then I'll provide you some
8 indication of how CHP is an integral part of a
9 national, state -- as well as the City of Chicago
10 energy plans.

11 And then finally, I'll end my section
12 with some of the misconceptions about CHP that we
13 hear as we conduct our outreach program in this
14 technology area in the Midwest.

15 So I'd like to describe the technologies
16 or elements of the CHP System, I'd like to do
17 that in three categories and the slide shows at
18 least two of those three categories.

19 The first is electric generation
20 technology shown by the pictures on the first row
21 of the slide; reciprocating engines, natural gas
22 turbines, that include both small output

1 turbines, mainly, the microturbines, as well as
2 the larger output air derivative gas turbines
3 that are not shown on the slide. And, finally,
4 the fuel cell.

5 The second category is not shown on the
6 slide and that is the heat recovery technologies.
7 The equipment that converts the heat that's
8 rejected by the electric generation equipment and
9 converts it into either hot water or steam.

10 And then the third category of the CHP
11 Technologies is shown in the bottom row of
12 pictures. It takes the steam, the hot water or
13 the direct exhaust gases and produces either
14 cooling, dehumidification and/or thermal storage.

15 This slide shows how these pieces or
16 technologies can be integrated into a CHP System
17 that can then provide both electricity directly
18 to the building and also supply treated air to
19 cool, heat or dehumidify the air into the space.
20 In this example, the hot exhaust gases from a
21 micro turbine are used directly to drive an
22 absorption chiller. Oftentimes hot exhaust gases

1 are sent through a heat recovery unit to produce
2 either hot water steam to then drive the
3 thermally activated pieces of equipment. In this
4 example, the exhaust gases from the chiller are
5 then used to dry or regenerate a dehumidifier
6 that produces dry air. The output of the chiller
7 and dehumidifier run through an air handler and
8 feed to the building space to provide at least a
9 portion of the buildings HVAC requirements. The
10 total system efficiencies of this type of system,
11 if properly installed and operated, can reach in
12 the high 60's low 70's and even to the high 70
13 percent range which is pretty efficient as
14 compared to a centralized generation and
15 individual HVAC systems at the building site.

16 At the large end of the CHP integrated
17 system, you might have what we refer to as a
18 direct heating and cooling system like the one
19 installed at the University of Illinois at
20 Chicago where I'm employed and it's located
21 within two miles of our meeting today. It is a
22 state of the art, 57 megawatt system.

1 It's located in two locations on our
2 campus. There is an east campus, 24 megawatt
3 facility and a west campus, 33 megawatt facility
4 with the two systems, although they're physically
5 located about a mile apart, they're connected by
6 a 69,000 volt line that actually runs down the
7 middle of Roosevelt Avenue, that allows the total
8 57 megawatts to be run as a single system. The
9 total system has been built in three separate
10 costs and payback projects over the past 10
11 years. Although the original engineering
12 estimates call for simple paybacks on each of the
13 incremental projects to be about 10 years, we've
14 experienced 7 to 7.5 year paybacks for the first
15 of the three project segments and we are
16 estimating that we will beat the 10 year payback
17 in each of the second and third phases.

18 The last --

19 COMMISSIONER HARVILL: Excuse me.
20 Commissioner Kretschmer has a question.

21 COMMISSIONER KRETSCHMER: I was going to ask
22 who owns this facility? Does the University or

1 does ComEd own the facility?

2 MR. JOHN CUTTICA: No, the University owns the
3 system as well as the distribution system.

4 COMMISSIONER KRETSCHMER: Thank you.

5 MR. JOHN CUTTICA: Also, the overall CHP
6 System has reduced emissions considerably.

7 The next slide. The total plan cost
8 consists of a bank of seven reciprocating engines
9 as well as three natural gas air derivative
10 turbines. We recover the waste heat in the form
11 of hot water on the one campus, the east campus;
12 and in the form of 150 PSI steam on the west
13 campus where the steam is used in the hospitals
14 and the medical school. The system provides the
15 campus with our electrical requirements and most
16 of our space heating and space cooling
17 requirements. This is a successful CHP System
18 that is located right here in Chicago and I'd be
19 happy to have you or your staff at the plant and
20 get and a firsthand look at a fully integrated
21 CHP System and talk to the facility manager on
22 how we sold it to the University board and how

1 the project has not only paid for itself, but has
2 been the financing tool to make other energy
3 efficiency improvements throughout the
4 University.

5 At the national level, our National
6 Energy Plan specifically out the need for CHP and
7 how the federal government can play the role in
8 promoting it's use. The U.S. Department of
9 Energy in response to the plan has established a
10 national CHP challenge to double the amount of
11 CHP installed in the U.S. with the baseline being
12 of 46 gigawatts installed in the U.S. through the
13 year 1998. The challenge is to increase the
14 amount of CHP installed in the U.S. to 92
15 gigawatts by the year 2010.

16 Also, the U.S. EPA is encouraging the
17 use of CHP by soliciting states, cities,
18 utilities, and industries to join that
19 partnership program to promote the use of CHP.
20 The organization shown in the last bullet are
21 Illinois entities that are formal members of the
22 EPA CHP partnership program. I'd also like to

1 point out that this past July, July 9th, the U.S.
2 EPA and partnership with the state of Illinois,
3 DCCA, the City of Chicago Department of
4 Environment and the U.S. DOE Chicago regional
5 office sponsored a one-day CHP workshop that
6 attracted over 170 Illinois business and
7 consumers to learn about CHP and what it can do
8 to positively impact the bottom line. This event
9 is but one example of the cooperative efforts
10 here in the state of Illinois and the interest
11 that our businesses and consumers have in this
12 energy concept.

13 The Environment Law and Policy Center
14 earlier this year announced the results of its
15 study on repowering the midwest in which the
16 study points out that CHP has great potential for
17 energy savings, economic benefits and
18 environmental improvements. The State of
19 Illinois Energy Policy developed the Governors
20 Energy Cabinet in conjunction with many of the
21 energy experts and the state recognizes the need
22 to identify and remove the barriers associated

1 with the successful implementation of
2 distributed energy and, specifically, CHP. The
3 plan identifies the need for statewide
4 interconnect standards and the need for clear and
5 nondiscriminatory distributed generation rates.

6 The next slide. The City of Chicago
7 published energy plan calls for three things;
8 protecting the consumer, promoting economic
9 growth, and protecting the environment. And you
10 can see from the strategy and the pie chart that
11 CHP is to play a significant part in the future
12 City of Chicago plan for dealing with projected
13 electricity growth over the next 10 years.

14 I'll also point out that today the City
15 has at least two significant CHP programs
16 underway to provide education, information and
17 technical assistance on CHP to the industrial, as
18 well as the hospital communities within the city.

19 That brings me to the last point that I
20 want to cover, which is some of the
21 misconceptions that we run into when we conduct
22 our outreach program in this CHP area.

1 Oftentimes what we hear is that
2 installing CHP in the commercial and industrial
3 market sectors will, in quotes, cause higher
4 electricity prices for the residential customer
5 which is a -- somewhat captive customer grid.

6 We also hear that too much CHP installed
7 in an area could cause electric grid instability.

8 And the other thing we hear is that CHP
9 is not environmentally friendly, in quotes, it
10 pollutes.

11 Well, these in our opinion, are
12 misconceptions and the answers to these
13 misconceptions are shown on this slide and you
14 can read them faster than I can example them, but
15 I would like to, at least, comment on the first
16 misconception, the fact of higher power costs for
17 the captive grid residential customers and -- as
18 was stated before and I'll state it again, that
19 distributed resources and CHP really, if you talk
20 to the experts, talk about only representing a
21 portion of the expected growth. And I think Ted
22 mentioned DOE says that it's somewhere around 15

1 and 20 percent of the expected growth if CHP was
2 wildly successful. And this will increase grid
3 utilization and actually will moderate
4 electricity.

5 That concludes my portion of the
6 presentation and I'll turn it over to John Moore
7 to walk us through the barriers and the rest of
8 the presentation. Thank you very much.

9 MR. JOHN MOORE: Thanks, John.

10 We want to discuss, specifically,
11 several barriers to the point of distributed
12 resources and combined heat and power in
13 Illinois. These are well known, I think, by now.
14 People have been discussing these barriers for
15 years and the Combined Heat and Power Initiative
16 would like to see additional action by the
17 Commission to address, at least, a couple of
18 these barriers. Not all the barriers, obviously,
19 are barriers that the Commission itself can
20 resolve. We're focusing on this presentation on
21 the barriers that are within the ICC's
22 jurisdiction, generally. There are commercial

1 and developmental barriers that are being
2 addressed elsewhere.

3 Probably the number one cited barriers
4 to distributed generation is the lack of standard
5 interconnection terms and conditions. It is true
6 that each major utility and distribution company
7 has its own standards for distributed generation;
8 but they're not uniform and they don't apply
9 across the entire state for entire categories of
10 distributed generation, typically based on size
11 and that's what other states in the FERC are now
12 working on.

13 Without those standard interconnection
14 terms and conditions, you have a lengthier
15 interconnection approval process, costly fees and
16 fees that can vary from unit to unit and high
17 interconnection equipment costs, these are
18 rentals, from Disco for example.

19 Another barrier are high standby
20 charges. There's no question that standby
21 charges are a complicated matter, especially in
22 Illinois because we're moving through

1 restructuring. But standby charges do exist
2 still and they are a barrier.

3 Another barrier which, to some extent,
4 is a subset of interconnection or network
5 limitations and this is particularly true in the
6 city of Chicago and we'll discuss that briefly.

7 Other barriers I've mentioned are those
8 barriers that are not so easily addressed through
9 the Commerce Commission.

10 It's worth briefly pointing out that the
11 ICC Staff report does support policies directed
12 at promoting competition through eliminating the
13 artificial barriers to distributed resources
14 development and utilization which, of course,
15 combined heat and power as well.

16 We've assembled a half dozen barrier
17 examples of how these different barriers might
18 apply in practice. They are reflective of major
19 barriers. We're not necessarily saying that
20 they're typical in all cases, but these are
21 barriers -- examples of barriers that people come
22 to us and told us about and I assure you that

1 there are other examples where people are very
2 reluctant to speak out publically about them
3 because, understandably, they're involved in
4 sensitive negotiations and discussions with the
5 distribution utility and they don't want to harm
6 their own negotiating position vis-a-vis that
7 utility. So, understandably, there are others
8 out there but it's just simply not easy to
9 discuss them as publically.

10 The first example is one that raises the
11 issue of network interconnection, both costs and,
12 frankly, the inability to connect in a network.
13 This is 30 North LaSalle Street, large office
14 building, City of Chicago Development of
15 Environment, I believe, is in this building.
16 ComEd has a general policy of not allowing
17 interconnection to its downtown Loop network of
18 radial distribution feeders. This is unlike the
19 experience that this particular developer --
20 which is Equity Office Properties Trust -- has
21 experienced in other major cities around the
22 country and in its view, the barrier prevents

1 installation in prime downtown office buildings.

2 COMMISSIONER HARVILL: John?

3 MR. JOHN MOORE: Yes.

4 COMMISSIONER HARVILL: Why does ComEd have
5 this policy?

6 MR. JOHN MOORE: Primarily because of
7 maintaining distribution system integrity within
8 the feeder system. To be honest with you, we've
9 gotten different answers from different people
10 we've talked to. There's no doubt that the
11 network issue, because it is an interconnected
12 system of distribution lines raises challenges
13 that don't exist on a straight distribution -- on
14 a straight feeder system. That's why the FERC,
15 advanced notice of rule making on small
16 interconnection addresses this. And that's why
17 standard interconnection requirements in other
18 states have special rules that address network
19 interconnection.

20 This is one of those issues where we
21 think it would be wise for the Commission to
22 convene a special work-study group or work group

1 to actually explore this issue in a little more
2 detail.

3 COMMISSIONER HURLEY: You just said in this
4 statement that they generally do not. So can I
5 assume from that statement that there have been
6 exceptions within the Loop?

7 MR. JOHN MOORE: Indeed -- well, there have
8 been exceptions and I'm aware of one that we're
9 going to be talking about in another example
10 because I do want to commend ComEd for allowing
11 that in another example.

12 So, yes, there are -- I'm only aware,
13 personally of the Museum of Science and Industry
14 example which we're going to discuss.

15 COMMISSIONER HURLEY: And, John, as you go on,
16 just so that I can better understand what our
17 authority is here, would you get into the area of
18 where the Commission's jurisdiction precisely is
19 and why we have it.

20 MR. JOHN MOORE: That's a good question. I
21 think, number one, a general -- the one that
22 comes to mind for me is the general requirement

1 for just -- ensuring just and reasonable rates
2 and -- for electric consumers. That's the big
3 one and I haven't done an exhaustive review of
4 the Public Utilities Act.

5 COMMISSIONER HURLEY: I think I'm asking you a
6 terribly important question.

7 MR. JOHN MOORE: Absolutely.

8 COMMISSIONER HURLEY: And you have to help me
9 better understand -- so you're using --

10 MR. JOHN MOORE: The issue of network
11 interconnection as I've seen it evaluated both by
12 FERC, which also relies on just and
13 reasonableness standard and in other states, has
14 been a subset of the interconnection -- of the
15 general interconnection standards.

16 COMMISSIONER HURLEY: Right. That's where --

17 MR. JOHN MOORE: You see it.

18 COMMISSIONER HURLEY: You start.

19 MR. JOHN MOORE: Right.

20 COMMISSIONER HURLEY: And do a rule making or
21 whatever underneath that. You will be
22 recommending --

1 MR. JOHN MOORE: That's exactly what we would
2 be recommending. And to the extent that there
3 are any other -- there are any jurisdictional
4 issues we, obviously, we would need to discuss
5 that with the Commission and Commission Staff.
6 But the just reasonable rate foundation is what
7 FERC relies on for its jurisdiction. Of course,
8 there are other FERC jurisdictional issues
9 involved in the interconnection standards that,
10 fortunately, we don't have to worry about here.

11 COMMISSIONER HURLEY: I'm sure we have them as
12 well, I just don't know what they are. So I'm
13 going to reach out to you to help me.

14 MR. JOHN MOORE: Absolutely. And we can do a
15 full legal report on what we think the existing
16 jurisdictional authorities are and whether or not
17 any additional or specific jurisdictional
18 authorities are necessary and that is actually an
19 issue that was -- I don't recall, Commissioner
20 Harvill, maybe you can help me, but I don't think
21 that was an issue that came up in any great
22 detail back in 2000 when we were discussing these

1 issues.

2 COMMISSIONER HARVILL: I don't believe it did.

3 MR. JOHN MOORE: So that's one that --

4 COMMISSIONER HURLEY: I was here too and I
5 don't remember, but it certainly sounds -- it's
6 of interest to me --

7 MR. JOHN MOORE: -- the foundation --

8 COMMISSIONER HURLEY: I always like to know
9 where the Commission gets its authority to do
10 certain things that people come here and ask us
11 to do.

12 MR. JOHN MOORE: Sure. And the justness and
13 reasonableness standard is probably a start, but
14 we'll look into the --

15 COMMISSIONER HURLEY: It would not surprise me
16 if there are other applicable statutes that we
17 can derive such authority from too. I'm not
18 asking the question as the devil's advocate. I'm
19 asking a question -- even though I hate asking
20 questions I don't know the answer to, I don't
21 know the answer.

22 MR. JOHN MOORE: I think it sounds like an

1 excellent question and one that we'll look at
2 much more closely.

3 COMMISSIONER HURLEY: It requires some --

4 MR. JOHN MOORE: Good research.

5 The second example involves the U.S.
6 Army Corp of Engineers lab facility in Champaign.
7 A couple of different issues, one was of the
8 interconnection -- this is with Illinois Power.
9 The first issue was -- the first barrier, for
10 example, was interconnection delay cost
11 complexity. It's all laid out right there. This
12 is for a 30 kilowatt Capstone Microturbine. It's
13 a UL listed system. It's, obviously, relatively
14 small, it's off the shelf equipment with packaged
15 control ship logic systems and all the other
16 bells and whistles. It's taken the U.S. Army
17 Corp of Engineers nearly a year to get to the
18 point of a -- of an interconnection agreement. I
19 think it may either have happened in the last day
20 or two or is coming down the road very shortly.
21 The standard agreement that IP uses is 40 pages
22 long which we believe is excessive for a 30 kw

1 system. Commendably, Illinois Power is working
2 on a shorter agreement for smaller connections.
3 Again, that's my understanding, that's what the
4 Corp has told me.

5 Standby charges, though, are a real
6 serious problem here. The calculations that we
7 received from the Army Corp range up to \$709 per
8 month in the summer, 659 in the winter and a lot
9 of those charges are fixed charges. A facilities
10 charge of \$375, a transformation charge,
11 distribution capacity charge, reactive demand
12 charge. And this is all for a 30 kw system.

13 COMMISSIONER HARVILL: Let me ask this
14 question, John. It's a 30 kw system, it's UL
15 listed, what is Illinois Power's justification
16 for a \$4,000 interconnection study? I mean, this
17 isn't new technology -- it's new technology, but
18 it's not that new, it's an off the shelf system
19 that's been around for awhile.

20 MR. JOHN MOORE: It has been around for
21 awhile. I don't know the complete answer for
22 that because -- what the Army Corp has told me is

1 that that is IP's standards practice and I
2 suspect that until IP believes it has developed
3 more experience with these off the shelf
4 distribution systems -- distributed generation
5 systems, it feels compelled to charge a \$4,000
6 fee for the study. Remarkably, other states,
7 Wisconsin, for example, which is running through
8 it's proposed interconnection standards now, I
9 think the study fee -- I've got it on another
10 slide -- is something like the maximum of \$500
11 for a system this size.

12 COMMISSIONER HARVILL: Michigan has something
13 similar.

14 MR. JOHN MOORE: Michigan, yes. Well,
15 Detroit, maybe Detroit is a good one. It's
16 similar. Michigan is working now on statewide
17 standards. We have a slide but most state
18 interconnection standards break them down by size
19 and 30 kw is at the low end of the spectrum.

20 COMMISSIONER HARVILL: Could you provide --
21 you'RE talking about the standby charges on that
22 of \$709 in the summer. What is the Army Corp of

1 Engineers typical utility energy bill during the
2 summer months?

3 MR. JOHN MOORE: I can't answer that for you.
4 I can get that information, but I don't really
5 know how it compares to that standby charge. I
6 do know that the -- with these fixed charges, in
7 particular, including that \$375 facility charge,
8 that really makes a system cost prohibitive at
9 this point. So it's honestly impossible for the
10 personnel down there to recommend that the
11 facility install the system with a price that
12 high.

13 COMMISSIONER HARVILL: It sounds like --

14 MR. JOHN MOORE: A second example is an older
15 one, admittedly. This goes back to 1990, but I
16 included this because it demonstrates that there
17 are some ambiguities out there regarding what
18 kind of equipment is necessary to make the
19 parallel interconnection to the grid. And in
20 this case and according to the developer of
21 this -- and by the way, at the end of the
22 presentation, I've listed the sources for all

1 this information. So I strongly encourage Staff
2 to contact people if they have any additional
3 questions about any of this because we listed
4 name, address, telephone number and all that --
5 in this case, ComEd asserted that the charge was
6 necessary for a particular trip device that would
7 cost \$250,000. The developer then had to
8 demonstrate at its own cost of \$10,000 that the
9 device was not necessary. The one thing I can
10 say is, that no matter who is paying the bill,
11 one thing has come clear to me over the years,
12 these engineers are not cheep because no matter
13 who is doing the study, it's relatively easy to
14 rack up some double, triple, five digit fees
15 here. Ultimately, in this case, the
16 interconnection charges total approximately --

17 COMMISSIONER HURLEY: Is there an assumption
18 on someone's part that engineers should be
19 different than any other kind of consultant, or
20 accountant or any other professional these days?

21 MR. JOHN MOORE: Apparently not. In this case
22 the interconnection charges eventually total

1 approximately \$70,000. At the high end of
2 interconnection sizes, the standards that are out
3 there now do allow costs based standards -- do
4 allow cost based fees for interconnection. I
5 don't think anyone's going to say that on a, you
6 know, relatively large mid-sized facility such as
7 this that ComEd can only charge 250 or \$500 for
8 the interconnection study, so there are -- most
9 of the draft rates that I've seen -- when you get
10 to the higher end, you do get cost based fee
11 requirements.

12 COMMISSIONER HURLEY: We probably need to talk
13 to -- or maybe you need to -- we need to talk to
14 some of our telecom people who were around some
15 years, quite a few years ago, when this all began
16 after the break up of AT&T in the '96 Act and so
17 on and so forth, because certainly the telecom
18 companies went through this and the Commission --
19 as we sit here today rules on interconnection
20 agreements between ILECs and CLECs all the time.

21 MR. JOHN MOORE: You're absolutely right.
22 And, in fact, that's most of what I've seen in my

1 research of the ICC decisions, it's telecom.

2 COMMISSIONER HURLEY: I mean this is -- so
3 many times I sit through these policy sessions
4 and I have deja vu to, you know, a period of time
5 back in the '80s when I was an ALJ here and all
6 this sort of began on the telecom side and here
7 we are doing it again, but we often times don't
8 cease the opportunities that we have because we
9 have Staff at the Commission who was around back
10 at those days, so it probably would be helpful to
11 us.

12 MR. JOHN MOORE: Another example involves the
13 Museum of Science and Industry with one and
14 three-quarter megawatt natural gas reciprocating
15 engine with heat recovery. Here, the primary
16 issue is interconnection delay and costs. The
17 total interconnection costs was approximately
18 \$150,000, that's according to the developer.
19 ComEd's original six week estimate for
20 interconnection required actually double that
21 time for a total of three months. And to ComEd's
22 credit, it did allow interconnection on this

1 line. I think at the lower end of ComEd's
2 network system, it's a 12 kv line and I think the
3 lines downtown are at a higher voltage and I'm
4 not sure because I don't know all the details if
5 that's the reason why ComEd allowed this
6 interconnection, but I think it's an important
7 one to recognize, ComEd allows -- and the network
8 does go all the way down to the Museum of Science
9 and Industry, but it cost \$150,000 or so to make
10 the interconnection. Another one --

11 COMMISSIONER KRETSCHMER: You do know that we
12 do have to approve those costs?

13 MR. JOHN MOORE: Yes, I do.

14 COMMISSIONER KRETSCHMER: And they have to
15 show that they are fair, reasonable -- just and
16 reasonable and that, indeed, is their cost, you
17 wouldn't want other rate payers to subsidize
18 these interconnections.

19 MR. JOHN MOORE: I think that's absolutely
20 right and I think --

21 COMMISSIONER HURLEY: I'm confused. Then
22 who's paying the \$150,000 for the

1 interconnection -- the study rather?

2 MR. JOHN MOORE: The study is paid by the
3 developer. ComEd does not pay the study costs.

4 COMMISSIONER HURLEY: Right. So what are you
5 saying?

6 COMMISSIONER KRETSCHMER: I'm saying I like
7 distributed generation. In fact, I might want a
8 fuel pump in my garage -- fuel cell, but I don't
9 think that other rate payers should pay the costs
10 for these interconnections, it is should be borne
11 by the cost group.

12 MR. JOHN MOORE: I think the -- the problem --
13 I'm not sure I understand how the Commission
14 actually approves each of these interconnections.

15 COMMISSIONER KRETSCHMER: I'm sure it takes a
16 long time.

17 MR. JOHN MOORE: I think -- I know that if --

18 COMMISSIONER HURLEY: We don't.

19 MR. JOHN MOORE: -- the developer -- I think
20 the developer would have to file a complaint.

21 COMMISSIONER HURLEY: That's why we're here
22 talking about this.

1 MR. JOHN MOORE: The developer would have to
2 file a complaint with the Commission for
3 something to happen.

4 COMMISSIONER KRETSCHMER: If the developer
5 pays, of course, we don't have to approve the
6 costs because he's paying?

7 MR. JOHN MOORE: Right. Right.

8 COMMISSIONER KRETSCHMER: But if any carry
9 over to the other customers of ComEd, then we
10 become involved.

11 MR. JOHN CUTTICA: If I could inject something
12 here. I think what all these things are showing
13 is that from example to example, there may not
14 be, at least in our opinion, a lot of consistency
15 in the costs for these studies, the time for
16 these studies. And what we're saying is that if
17 we can standardize some of these interconnect
18 procedures such that if you're doing 130 kilowatt
19 microturbine in Champaign and you're doing
20 another one in Chicago and they're fairly similar
21 and interconnect, then there should be some
22 standard procedures, some standard costs and some

1 standard times involved.

2 COMMISSIONER KRETSCHMER: That isn't logical
3 from our perspective because each utility is
4 different. They don't have the same costs per
5 kilowatt hour, they don't have the same costs for
6 anything between -- each utility comes to us with
7 a rate case that we allocate the costs for --

8 MR. JOHN CUTTICA: Let me change my example.

9 COMMISSIONER HURLEY: You're talking about the
10 studies.

11 MR. JOHN CUTTICA: I'm talking about the
12 studies, yes.

13 COMMISSIONER SQUIRES: Can I ask a question,
14 please? Commissioner Kretschmer, you mentioned
15 that the -- in fact, the question, Who was
16 picking up the bill? And I think the response
17 was the contractor but, still, the end user still
18 pays for that in the long run.

19 MR. JOHN MOORE: Absolutely. No, in fact, the
20 contractor bills the end user.

21 COMMISSIONER SQUIRES: So even though you're
22 indicating that the contractor is picking it up

1 it's really the user, right?

2 MR. JOHN MOORE: Absolutely. Absolutely.

3 And, I guess -- to give you an example of what
4 we're talking about here and what other states do
5 with the interconnection standards, I've seen --
6 I think FERC does this and I know this is true in
7 a couple other states as well. The FERC -- the
8 interconnection standards actually establish
9 certain presumptions so that the interconnection
10 has to be allowed at certain costs assuming that
11 the total number of distributed resources on the
12 line doesn't equal more than 15 percent. So it
13 sort of shifts the burden of proof because,
14 otherwise, these connections -- these
15 interconnection costs really don't come before
16 the Commission unless -- and I know it's happened
17 in a couple of instances, at least I heard it
18 has -- the user, contractor or who ever comes to
19 the Commission and files a complaint --

20 COMMISSIONER HARVILL: John, if I could
21 clarify this. I think the point you're trying to
22 make, I think, is that -- and let's use the 30 kw

1 microturbine on the previous example -- if an
2 individual wants to install a 30 kilowatt
3 microturbine, it's either UL listed or, you know,
4 meets certain IEEE standards, there should be a
5 standard interconnection for that process state
6 agreement across the country for them because it
7 meets certain technical requirements at a certain
8 cost. It would not be sensible for ComEd to
9 charge them \$500 for an interconnection study and
10 to interconnect them with an out-of-state
11 utility -- let's pick on Illinois Power -- charge
12 them, you know, \$20,000 for that same
13 interconnection study. If they meet certain
14 standards, either being UL listed or being --
15 meet certain IEEE standards, then it should be a
16 plug and pay -- you know, the cost is X amount of
17 dollars to interconnect and you can go forward
18 with the project. I think that's what you're
19 trying to get to, correct?

20 MR. JOHN MOORE: That's exactly what I'm
21 trying to say.

22 COMMISSIONER KRETSCHMER: The problem then,

1 Commissioner Harvill, have you ever known
2 consultants to come in with a standard cost?

3 COMMISSIONER HARVILL: I don't think it's the
4 consultants per se, I think it's the utilities.

5 COMMISSIONER KRETSCHMER: They said it's going
6 to cost \$4,000 -- I'm looking at the ones at
7 Illinois Power -- we put into escrow to fund an
8 interconnection study. Now, is the study always
9 done in-house or do they hire out by consultants?

10 MR. JOHN CUTTICA: Most of them -- my
11 experience is most of them are done by the
12 utilities internally with the utility engineers.

13 MR. JOHN MOORE: In this example, for example,
14 I think I can say with almost certainty for a 1
15 kv or a 2 kv panel system, I believe they do that
16 in-house.

17 COMMISSIONER KRETSCHMER: That's just for the
18 study, I'm not talking about the interconnection
19 itself.

20 MR. JOHN CUTTICA: This is a study that then
21 comes back and tells the --

22 COMMISSIONER KRETSCHMER: The utility.

1 MR. JOHN CUTTICA: No. The utility does the
2 study and then comes back and tells the
3 installer, whether it's the owner or the engineer
4 representing the owner that if you are going to
5 install this, first of all, you can or you can't
6 install it and if you can, this is what you have
7 to do in order to meet our requirements; and they
8 get paid to do that study.

9 And, in fact, my example before might
10 have been a little -- not quite on mark to say
11 from Southern Illinois to, say, ComEd's
12 territory, but there are certainly examples
13 within the same utility that a study from one
14 installation to another installation and are very
15 similar might be different in cost.

16 Now, sometimes it might be justifiable
17 if there are circumstances, but I think in
18 general, if we can standardize this procedure,
19 then, at least, one recognizes that this is what
20 you have to do, this is basically what it's going
21 to cost and that you know that if you make the
22 application within a certain period of time, that

1 you will get an answer and it's not three months
2 one time, six months the next time; \$4,000 one
3 time and \$20,000 the next time.

4 COMMISSIONER KRETSCHMER: Let me play devil's
5 advocate. I rarely have seen great similarity
6 between interconnections. You cannot compare
7 this IP interconnection with the one that ComEd
8 did for the Museum of Science and Industry -- is
9 it the Museum of Science and Industry?

10 MR. JOHN CUTTICA: That's correct.

11 COMMISSIONER KRETSCHMER: The complexity, the
12 distance -- there have to be so many variables
13 that it would be almost incredibly difficult, if
14 not impossible, to set standards. I don't know
15 how it's done. It might be very nice if we could
16 do it, but you'd have to come in with a plan to
17 show us how it can be done and I don't think that
18 plan -- I'm willing to be shown that I'm wrong.

19 MR. THEODORE BRONSON: Here's a draft that we
20 have up on the screen right now which has been
21 proposed in Wisconsin. Again, if you look here,
22 it's broken down into four categories.

1 Obviously, the Museum of Science and Industry
2 would fall into the largest category; where the
3 microturbine would fall into the second category,
4 greater than 20 kilowatts or 200 kilowatts. The
5 key interconnection study did 10 days, 15 days,
6 up to 40 days. Distribution systems study
7 deadlines, that was 60 days. Application fees,
8 standardized interconnection study fees;
9 especially for the smaller equipment, no fee for
10 20 kilowatts or less, less than 200 kilowatts, a
11 \$500 fee, and they get into cost-based as we go
12 up to the larger systems.

13 MR. JOHN MOORE: So you're absolutely right.
14 For those larger systems, in particular, it's not
15 a cookie-cutter approach, and that's why
16 regulations such as these draft Wisconsin
17 standards allow cost-based recovery of --
18 cost-based at interconnection study fees. What
19 these standards do, though, is lay out pretty
20 specifically -- and these are standards that have
21 received, you know, general consensus -- specific
22 requirements for each interconnection study

1 address, you know, the similar required set
2 standards, require specific equipment to be
3 mentioned in each interconnection study.

4 So it lays out some standards,
5 absolutely, the costs will differ; but the
6 regulations establish some standards and that's
7 what we're asking for, absolutely. At the low
8 end of the spectrum, we think that the Commission
9 should follow what Wisconsin and other states are
10 doing which is to have flat fees, minimal fees, I
11 mean, you don't need a \$4,000 fee to connect a 1
12 kv system, and I think we could probably get some
13 general consensus among the engineer community;
14 that's the case.

15 MR. THEODORE BRONSON: And another key thing
16 here, what we don't want to overlook is the
17 interconnection study deadlines, 40 days and 60
18 days. That's key in scheduling projects and
19 minimizing delays to know what that time is going
20 to be and meet that time consistently.

21 MR. JOHN MOORE: Let's zip back a couple of
22 pages, at least, just to put a little balance in

1 here. We're not suggesting that everything is
2 gloom and doom. There are some positive
3 developments for CHP and other distributed
4 resources in Illinois and else where. The first
5 three focus primarily on Illinois and that is
6 that the restructuring law did not -- or exempted
7 self-generation and co-generation/DEP from exit
8 or CTC fees.

9 The second is that ComEd, for example --
10 and I can't speak, you know, to the IP, but I
11 know that ComEd does have peak pricing tariffs
12 that help to reduce grid congestion and encourage
13 some use of combined heat and power; but those
14 tariffs, of course, are always subject to change
15 and we're not here to argue about what the
16 pricings should be.

17 There's been a general reduction of
18 renegotiated rates or negotiated rates where the
19 utility can come in and undercut CHP developer
20 price. That, though, will change, as I
21 understand it, after restructuring is complete
22 and then I think our objective is for the

1 marketplace to really decide all of these issues
2 on rates.

3 Another positive development that I've
4 mentioned now is the FERC interconnection notice
5 of proposed ANOPR for small generators up to 20
6 megawatts and this establishes a presumption of
7 no -- among other things, it would establish a
8 presumption of no impact of the distributed
9 resource to the transmission grid when each of
10 these -- a couple of these pre-paid standards are
11 met and this sort of shifts the -- it does shift
12 the presumption or the burden back to the
13 distribution company to demonstrate why
14 interconnection is not appropriate. The FERC
15 interconnection ANOPR, as you may know, just came
16 out a couple months ago and FERC will be issuing
17 something on that soon, that's only going to
18 apply to wholesale power and connection to the
19 transmission grid, so it will have limited, you
20 know, applicability to states, but it could be a
21 good model since it's only a 10-page ANOPR at
22 this point, we don't have a lot of specificity on

1 that.

2 At this point -- and we've probably
3 already discussed most of this -- but we proposed
4 several solutions. Ted, maybe you want to walk
5 through this just a little bit.

6 MR. THEODORE BRONSON: Just very briefly.

7 COMMISSIONER HARVILL: Could you move closer
8 to the microphone?

9 MR. THEODORE BRONSON: Very briefly. One
10 thing we would like for the Commission to
11 consider would be to develop standard
12 interconnection rules and agreements for the
13 reasons we had discussed previously; to minimize
14 delays, to streamline the process and make it
15 more consistent across the state. And in doing
16 this and standardizing everything, obviously, we
17 need to keep two concerns in the forefront:
18 Number one, safety for electric workers at the
19 utilities, that's what I understand is their
20 number one concern. We can provide for safety
21 and at the same time provide open access for
22 consumers who do want to take advantage of some

1 of the benefits of CHP.

2 I think we talked about some of the
3 benefits for standard interconnection, rules,
4 lower transaction costs, clear certain
5 understandable terms and conditions, faster
6 process, removing a lot of the negotiation that
7 happens from project to project; and it reduces
8 the role of the distribution system owners as an
9 obstacle to interconnection.

10 MR. JOHN MOORE: And here we have a quote from
11 the Staff report discussing why these
12 requirements would be useful. We've already
13 talked about this slide.

14 MR. THEODORE BRONSON: Some other state
15 standards -- Texas actually set the standard for
16 the country in 1999 by developing their
17 interconnection standards. And one of the things
18 that was unique with Texas, what they did about a
19 year later was develop a guidebook, a distributed
20 resources one-stop interconnection guidebook.

21 MR. JOHN MOORE: This is the Texas Public
22 Utility Commission.

1 MR. THEODORE BRONSON: Right. So if you
2 needed -- if you're considering a CHP project and
3 you want to interconnect, this guidebook would
4 give you the utility contact, who to contact at
5 each utility, all of the guidelines, all the
6 agreements, the standard agreements, the fees
7 that you have to pay. It's a pretty
8 comprehensive guideline, but it's really helpful
9 from what we can see to promote DR or streamline
10 the process in Texas.

11 California, New York also have final
12 standards. The standards are out right now and
13 in the Midwest, some of the states with
14 proceedings that are going on right now include
15 Minnesota, Michigan, Indiana and Wisconsin.

16 MR. JOHN MOORE: A second solution, as we
17 discussed, would be changes to the standby
18 charges that are in the tariff rates and we
19 probably hinted at this, but challenge on standby
20 charges is really quantifying the actual costs,
21 assuming that they should be cost-based rates and
22 there really is a lot of work being done on this

1 now and we don't have the single solution for
2 you; but we think it's something that needs to be
3 studied in more detail, particularly when you
4 have examples like I showed you with the \$345
5 facilities charge in one -- essentially, the
6 Illinois Power's standby tariff.

7 A third point, addressing network issues
8 here, noteworthy that Texas interconnection
9 standard requires network interconnection or --
10 I'm not sure if it's required, I think it
11 actually requires it, assuming you have
12 protection, unless total distributed energy on
13 the feeder represents more than 25 percent of the
14 network load. The FERC standard is identical to
15 that, I believe. The FERC used the Texas
16 interconnection standard as a model for the small
17 ANOPR.

18 New York has a similar allowance,
19 somewhat different, but also allows network --
20 interconnection to the network. So that's another
21 issue that is worthy of additional study.

22 This is where we come down to what we'd

1 like to see the Commission do, and it's pretty
2 clear from our presentation, we'd like to see
3 expedited adoption of standard interconnection
4 terms and conditions, including the networking
5 issue for short and convene workshops to study
6 the standby charge issues whether or not there
7 are any other tariffs that are even possible at
8 this point, given the restructuring that would
9 help implement the Illinois Energy Plan, the
10 Chicago Energy Plan and other similar objectives.

11 COMMISSIONER HARVILL: I have one question
12 before I turn it over to the other Commissioners.
13 You talk about the FERC ANOPR that's going on. I
14 know NARUC has come out with a set of proposed
15 standards for DG, this all begs the question, why
16 should the Commission do this if it's being done
17 on the federal level or we have these NARUC
18 guidelines that are out there right now? What is
19 it that we can do that won't be capturing those
20 other -- either the FERC procedure -- the FERC
21 ANOPR or the guidelines?

22 MR. JOHN MOORE: Well, I absolutely agree that

1 the FERC standard can be used as a model. I
2 mean, it applies to most wholesale power sales,
3 it applies interconnections to the transmission
4 connection grids, so I think it's going to apply
5 to anyone who interconnects for self-generation
6 or otherwise is an interconnection transmission
7 grid. There's no doubt that states in the
8 midwest, I think, some of them, at least, have
9 slowed down a little bit to wait to see what
10 Texas -- what FERC does, but FERC has based their
11 standard on the Texas --

12 COMMISSIONER HARVILL: I think FERC and the
13 Texas Commission are the same thing.

14 MR. JOHN MOORE: I mean, I guess everyone is
15 supposed to follow what Texas is doing now, but
16 they've -- the TPUC has been a model in several
17 different initiatives. So there will continue to
18 be the need for state interconnection standards,
19 absolutely, and then an issue like the networking
20 issue, I certainly believe requires specific
21 study because of the Chicago problem, I don't
22 think -- FERC's obviously not going to deal with

1 that, so I think that's another useful point that
2 the Commission study.

3 MR. THEODORE BRONSON: One thing FERC does not
4 cover are the retail distributions.

5 MR. JOHN MOORE: Correct.

6 COMMISSIONER HARVILL: Questions from the
7 Commissioners?

8 COMMISSIONER HURLEY: This is an observation,
9 I'm not trying to be amusing, but more and more
10 parties are coming to the Commission it seems
11 asking for expedited relief. I'm trying to
12 figure that out and in deed, the first time you
13 came to see us was two years ago on this issue,
14 but now you want --

15 MR. JOHN MOORE: Well, actually we did not
16 individually come here two years ago. It's
17 funny, you had organizations --

18 COMMISSIONER HURLEY: I'm not --

19 MR. JOHN MOORE: You had Enron coming to ask
20 for assistance and where's Enron now? Now I
21 think --

22 COMMISSIONER HURLEY: I would think that what

1 you want would require a petition filed with the
2 Commission making a request for such relief and
3 then a review by our Staff. Is that what you're
4 contemplating?

5 MR. JOHN MOORE: That may be an option that --
6 we've talked about that internally and that --
7 along with the jurisdictional issue go hand and
8 hand and then I think that's one option.

9 COMMISSIONER HURLEY: Yeah, I generally think
10 it's something that the Commission should, you
11 know, if we haven't already at least start to
12 look at them.

13 MR. JOHN MOORE: Well, as John Cuttica said,
14 we had 170 people at the July meeting all focused
15 on Illinois, CHP and distributed resource issues
16 and there was pretty strong interest in something
17 like that. They weren't so concerned with the
18 particular legal avenue, that's more my interest
19 than yours, but it seems clear --

20 COMMISSIONER HURLEY: Well, no, I mean, for
21 example, I'm questioning you John, from the -- I
22 want to make sure I understand what gives us the

1 authority. I know we got the authority; I just
2 want to know what part of the statute. We always
3 have the authority unless the legislature says
4 you don't, I mean, I just want to know where it's
5 coming from. I just got a kick out of the
6 expedited relief, we've had a few requests for
7 that.

8 COMMISSIONER HARVILL: Anything else?

9 COMMISSIONER HURLEY: I appreciate your
10 presentation.

11 COMMISSIONER SQUIRES: I really enjoyed this
12 presentation too and I have to agree that I would
13 like a cell in my garage or basement.

14 Commissioner Harvill did ask my question; that
15 is, what can we do considering that this is
16 costly and perhaps it needs much more work before
17 it should be something that we at the Commission
18 should take up. Although you have asked for some
19 kind of meetings and ways to look into this, but
20 I don't know yet. I have to think about it.

21 MR. JOHN MOORE: Our position is -- that we
22 think that a lot of the work has been done

1 already both inside the Commission with Staff and
2 outside in other states that there's a really
3 good base out there which actually -- in that
4 sense, a lot has changed since the year 2000.

5 COMMISSIONER SQUIRES: You indicated -- the
6 first 15 pages of your presentation talked about
7 the cost and the expended costs over and above
8 what is happening in the field now, in other
9 words, let's put these in, it's more costly and
10 under your -- I think it was under your
11 misconception you said that -- I don't know, it's
12 at the high power cost, you talked about that and
13 too much DR that the CHP will cause grid
14 instability and that this is dirty, you kind of
15 answered it; but it's still very, very expensive.

16 MR. JOHN CUTTICA: I'd like to just comment on
17 that Commissioner. We are seeing, for instance,
18 at the University the projected payback of that
19 system at the University. When it was first
20 estimated was a 10 year payback and we're seeing
21 paybacks in the range of about 7 to 7 and a half
22 years on that first increment, the first 12

1 megawatts that was put in. And the second
2 increment of megawatts that were put in, we're
3 not quite there yet, but all the projections now
4 after a couple of years of operation looks like,
5 again, we're heading towards something in the
6 range of 6 to 7 year payback on these systems.
7 So a lot of times there's a misconception out
8 there. If you read the trade journals, a lot of
9 people associate CHP or cogeneration with
10 microturbines and fuel cells. Now, microturbines
11 are a lot closer to reality and there are a few
12 of them out there, a substantial number but not a
13 huge number. Fuel cells, people like to read
14 about that; but fuel cells are still very
15 expensive and still a few years away. But if you
16 take the tried-and-true technologies of recip
17 engines and air derivative gas turbines and the
18 associated heat recovery equipment and thermally
19 activated devices, these are very real problems
20 that are here today and very cost effective and
21 very reliable.

22 COMMISSIONER SQUIRES: How much does it save,

1 for example, raw energy, coal, gas and so forth?
2 Do you think that you would be able to save over
3 a period of time by installing these large
4 turbo-type engines?

5 MR. CUTTICA: Yes. I think that some of these
6 systems, depending on the size, might range from
7 8 or \$900 a kilowatt installed to maybe 15,
8 \$1,500 a kilowatt installed depending on the size
9 ranges and as I said, Commissioner, some of these
10 systems, we've seen paybacks -- through the
11 higher efficiency and the energy savings, we've
12 seen paybacks ranging from a couple of years to
13 maybe a five to six or seven years depending --
14 the big kicker there -- there's several big
15 kickers, but part of it is the ability to use
16 that waste heat. If you can utilize that waste
17 heat in the building, now if you can't, then
18 you're not generating any better -- probably a
19 little worse than a central station power plant;
20 but if you can utilize that waste heat and you
21 have coincidence between the thermal act
22 requirements and the electric requirements of the

1 facility, then you can reach efficiencies as high
2 as 70, 75 percent, which is a tremendous increase
3 in efficiency which gives you the cost savings
4 and also the savings in pollution and the
5 emissions savings and it really is not something
6 in the future, it is here and now and if we can
7 just get these things we've asked for to kind of
8 smooth the way a little bit, I think we can make
9 some big influence.

10 CHAIRMAN WRIGHT: John, you mentioned 7 to 8
11 year payback, is that at the University of
12 Illinois.

13 MR. JOHN CUTTICA: That's at the University of
14 Illinois. The first increment, the first 12
15 megawatts that were installed, we had a payback
16 of about 7 and a half years.

17 CHAIRMAN WRIGHT: Are there any other state
18 universities that availed themselves to this type
19 of technology and if so, who is that?

20 MR. JOHN CUTTICA: Yes. In fact, there was
21 just a study done in which we can -- I'm being a
22 little evasive because I don't have the extensive

1 list; but there was a study just recently
2 completed by the -- what is it, The International
3 District Heating and Cooling Association for the
4 Department of Energy that looked at these types
5 of systems in universities. I know there's --
6 off the top of my head, MIT has, I think, one, I
7 hate to -- but there are --

8 MR. JOHN MOORE: We can go right to Illinois.

9 CHAIRMAN WRIGHT: That's where I'm headed.

10 MR. JOHN CUTTICA: Southern Illinois.

11 MR. JOHN MOORE: I think they're going on a
12 coal-based combining power district energy
13 system.

14 CHAIRMAN WRIGHT: I was curious whether any of
15 the institutions and the Board of Higher Ed had
16 expressed any kind of interest in this technology
17 because utility minds are certainly --

18 MR. JOHN CUTTICA: I think, Commissioner,
19 another very good application for this are
20 hospitals. And there are several hospitals in
21 the area because if you think about the use of
22 the thermal energy and that they have long hours

1 of operation, high electrical use, high thermal
2 use and in the state of Illinois there are quite
3 a few hospitals that have these systems
4 installed, have had good paybacks and are very
5 happy with their operation. And, again, we would
6 be happy to provide you a list of installations
7 in Illinois that are up and running. And, again,
8 I'd like to invite you and your Staff to come
9 take a look at our facility. I think it would be
10 quite an eye-opener for people.

11 COMMISSIONER HARVILL: I think that was the
12 facility that lost power during one of my finance
13 exams. We won't get into that.

14 Just to conclude things here, one of the
15 reasons why I think the Commission hasn't
16 acted -- talking to our Staff -- is, obviously,
17 organization of what we have going on here at the
18 Commission, and number two, it's really been more
19 of a situation of us not wanting to get in the
20 way in putting regulations and standards out
21 there prior to somebody coming to us and telling
22 us that there is actually a problem that we're

1 trying to solve rather than solving a problem
2 that may not necessarily exist. But I think your
3 presentation here today has alluded to some
4 problems that you have may be experiencing and we
5 will definitely take a look at that. I think
6 what I will probably do at a subsequent date is
7 request -- hopefully the other Commissioners
8 support me -- Staff will report to our Commission
9 kind of summarizing what work they have done to
10 date on this, I know it's been quite substantial
11 and maybe have some recommendations about how we
12 can possibly move forward and set this up.

13 MR. THEODORE BRONSON: One thing we'd like you
14 to note as far as some of the things that the
15 Midwest CHP Initiative and application center
16 have done to try to bring together states on the
17 interconnection issue in the Midwest, we did have
18 a workshop last February where we had Commission
19 Staff from seven states attend to do two things,
20 to share information on what each state was
21 doing, we started developing relationships and
22 also to hear from industry experts. We had Joe

1 Galo (phonetic) from U.S. DOE who has a
2 distributed power program, Dick Deblasio
3 (phonetic) from National Nuclear Energy
4 Laboratory, he is the head of the IEEE Committee
5 on interconnection and Miss Karen Heaton
6 (phonetic) from Texas to provide areas of
7 overview to the staff of all seven states;
8 Illinois was represented and our interaction with
9 them seemed to be very knowledgeable on the
10 issues that are going on.

11 COMMISSIONER HARVILL: So I think what we'll
12 do is, we'll go ahead and conclude today's
13 meeting and at a subsequent date we will be
14 asking for that report and hopefully we can make
15 some progress on the issue.

16 I thank each of you for your
17 presentations today in responding to our
18 questions.

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